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Silvia Gluck

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CONNOLLY BOVE LODGE & HUTZ, LLP

P O BOX 2207

WILMINGTON, DE 19899

EXAMINER

MARX, IRENE

ART UNIT

PAPER NUMBER

1651

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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Note:

The proposed amendment raises new issues that would require further consideration and/or search with respect to the extensive amendments to the claims to delete "wherein the enzyme is a lactate-racemase" and "alpha-hydroxycarboxylic acid racemase activity" and "wherein the enzyme is an enzyme present in intact cells of microorganisms of the genus *Lactobacillus* or *Lactococcus* or intact cells of a recombinant microorganisms which expresses the lactate racemase with alpha-hydroxycarboxylic acid racemase activity", for example and the addition of "contained in an extract of a microorganism or present in intact cells of a microorganism which express the enzyme, wherein said microorganism is selected from microorganisms of the genus *Lactobacillus* or *Lactococcus* and wherein said microorganism **is capable of racemizing** at least one compound selected from the group consisting of (R) and/or (S) form of phenyl lactate, 4- fluorophenyl lactate, 2-hydroxy-4-phenylbutyric acid, 2-hydroxy-4-methylpentanecarboxylic acid and 2-hydroxy-3-methylbutyric acid." It is noted, for example, that in cancelled claim 7, the enzyme "**isomerizes** at least one compound selected from the group consisting of (R) and/or (S) form of phenyl lactate, 4- fluorophenyl lactate, 2-hydroxy-4-phenylbutyric acid, 2-hydroxy-4-methylpentanecarboxylic acid and 2-hydroxy-3-methylbutyric acid."

In addition, new issues that would require further consideration and/or search are raised by the deletion of "purified enzyme" from the claims.

A Certified T3translation of the German Priority document 13027582.7 filed June 18, 2003 should be made of record.

The rejection under 35 U.S.C 102 over Stetter *et al.* is no longer maintained in view of applicant's arguments that that lactic acid is not a substrate in the claims.

### ***Response to Arguments***

Applicant's arguments have been fully considered to the extent that they pertain to the claims now of record but they are not deemed to be persuasive.

The argument that lactic acid is not a substrate in the claims is well taken.

However, Stetter *et al.* teach the microbiological isomerization of  $\alpha$ -hydroxy carboxylic acids using a lactate racemase produced by various *Lactobacillus* strains, even if the substrates as

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claimed are not the same as disclosed in the reference. See, e.g., Table 3, page 227 and Figure, page 237. In addition, the capabilities of the enzyme(s) of Stetter *et al.* are clearly the same as those claimed, since strain ATCC 15521 is the same as DSM 20017. In addition, the reference discloses strain *L. delbrueckii* ATCC 9649 which is identical to DSM 20074 as shown by applicants in their proffer filed 12/10/08.

Regarding the two step bioconversion disclosed by Mori for mandelic acid, it is noted that the present method does not exclude the use of two steps, since the method **comprises** isomerizing a substrate with an enzyme in a reaction medium with a lactate racemase. The use of the open language “comprising” does not limit the process to the steps specifically recited.

The claims now of record are not limited to a particular genus of microorganisms. In addition, the enzyme of interest need not be present in *Lactobacillus* or *Lactococcus* except for in claims 4-6.

Therefore the rejection is deemed proper and it is adhered to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Irene Marx/  
Primary Examiner  
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